



Artificial Intelligence and Machine Learning

Course Outline

Below is the Course Outline for this course.

Duration	Details
Week 1	Workshops <ul style="list-style-type: none">• Python Programming Basics• Data Wrangling with Python• Introduction to Artificial Intelligence<ul style="list-style-type: none">◦ Overview, History, Ethics and Case Studies• Data Analysis and Reporting• Data Visualisation with Matplotlib• Data Visualisation with Seaborn <p>Projects and Presentations</p>
Week 2	Workshops <ul style="list-style-type: none">• State-Space Problem Representations• Command Line Basics• Statistical Data Analysis• Git Basics• Probability Theory <p>Projects and Presentations</p>
Week 3	Workshops <ul style="list-style-type: none">• Intelligent Agents• Sampling Techniques• Statistical Distributions• Introduction to Machine Learning <p>Projects and Presentations</p>
Week 4	Workshops <ul style="list-style-type: none">• Regression Analysis• Feature Engineering Techniques

	<ul style="list-style-type: none"> • Business Metrics in Machine Learning <p>Projects and Presentations</p>
Week 5	Workshops <ul style="list-style-type: none"> • Classification Analysis • Hyperparameter Tuning <p>Projects and Presentations</p>
Week 6	Workshops <ul style="list-style-type: none"> • Bagging Algorithms • Boosting Algorithms <p>Projects and Presentations</p>
Week 7	Workshops <ul style="list-style-type: none"> • Time Series Forecasting Methods • Time Series Forecasting Methods II • Time Series and Machine Learning <p>Projects and Presentations</p>
Week 8	Workshops <ul style="list-style-type: none"> • K-Means Clustering • Hierarchical Clustering • DBSCAN Clustering <p>Projects and Presentations</p>
Week 9	Workshops <ul style="list-style-type: none"> • Artificial Neural Networks • Neural Networks Optimization • Recurrent Neural Networks <p>Projects and Presentations</p>
Week 10	Workshops <ul style="list-style-type: none"> • Text Processing Techniques • Text Classification • Text Summarization • Web Scraping <p>Projects and Presentations</p>
Week 11	Workshops <ul style="list-style-type: none"> • Convolution Neural Networks • Image Classification Optimisation <p>Projects and Presentations</p>
Week 12	Capstone Project Week